

## **ABSTRACT**

**[0034]** A series structure of a chemically amplified negative tone photoresist that is not based on cross-linking chemistry is herein described. The photoresist may comprise: a first aromatic structure copolymerized with a cycloolefin, wherein the cycloolefin is functionalized with a di-ol. The photoresist may also include a photo acid generator (PAG). When at least a portion of the negative tone photoresist is exposed to light (EUV or UV radiation), the PAG releases an acid, which reacts with the functionalized di-ol to rearrange into a ketone or aldehyde. Then new ketone or aldehyde is less soluble in developer solution, resulting in a negative tone photoresist.